ATTACHMENT J-5

NOAA SWATH
Coastal Mapping Vessel (CMV)

CRITICAL DESIGN REVIEW
PRESENTATION FORMAT

July 15, 2003

United States Department of Commerce
National Oceanic and Atmospheric Administration

Critical Design Review Presentation Format

The Contractor shall provide a presentation describing his contract design package, and associated cost estimate. The presentation shall demonstrate the maturity of the design and address readiness to proceed with detail design and construction. The presentation shall include an assessment of cost drivers and the associated levels of performance implemented in the contract design.

The presentation shall address:

- Introduction providing background
- Ship performance / mission support
- Ship general requirements
- Hull structure
- Propulsion Plant
- Electrical Plant
- Command and Control
- Auxiliary Systems
- Outfit and Furnishings
- Mission Electronics Systems and arrangements
- Charting Lab arrangement
- Mission Overboard Equipment Handling arrangements
- Service area arrangement
- Review of any unresolved issues
- Incorporation of all Approved Configuration Changes and deviations from Preliminary Design
- NTE Cost Estimate for Detail Design and Construction
- Schedule for Detail Design and Construction
- Overall Assessment and Recommendation

The contract design package consists of drawings and specifications representing a fully developed design that validates the bid price for the ship and mitigates technical risks. The purpose of this presentation, is to demonstrate that the package contains a firm technical baseline for detail design and construction with all design requirements and constraints of the SOR satisfied. The presentation shall show that the contract design is complete and approved, that the

contractor is agreeable to construct the vessel for an acceptable price in a cost effective manner, and that the contractor will stand behind the design and its performance.

The Critical Design Review presentation shall be prepared in a format compatible with Microsoft PowerPoint. The contract design package, updated SOR and supporting data shall be complete and copies available for reference/presentation. The Design Review shall present:

- Overview of each system or feature
- Functional operation and system characteristics
- Design validation – confirms design consistent with and reflects requirements
- Interfaces – assures that interfaces recognized and solution satisfies the needs

The review shall also address any issues or questions from the in-process reviews and their resolution. The minimum required content of each section of the presentation is as described in the following outline. Additional sections may be added if desired.

1. Introduction
    - Why are we here? – what decision are we addressing?
    - Background – Summary of work accomplished
    - How does the final contract design satisfy the requirements?
    - What are the major technical issues?
2. Ship performance / mission support
    - ABS and Regulatory Design Impacts and Compliance
    - Mission Suitability Features
3. Ship general requirements
    - Naval Architecture Review
        a. Weight and moment status and design margins
        b. Stability – loading conditions and stability limits (intact and damaged)
        c. Lines plan
        d. Resistance / Propulsion / Propeller design / Model test results
        e. Seakeeping analysis
        f. Maneuvering analysis
    - Noise Control
        a. Sonar Noise – governing criteria and design impact
        b. Airborne – design impact

- General Arrangements
    a. General arrangements
    b. Fire Control Plan
    c. Tank arrangements
    d. Endurance fuel
- Machinery Arrangements
- Equipment Removal Routes
    a. Reliability and maintenance

4. Hull structure
    - Midship Section and Scantling Plans
    - Structural Analyses
    - ABS Review
5. Propulsion Plant
    - Equipment Selection
6. Electrical Plant
    - Generating Plant Sizing (EPLA) and Equipment Selection
    - Generating System Diagrammatics and Distribution
7. Command and Control
    - Bridge Layout
        a. ABS notation (NBL or NIBS Option)
        b. Ballast Control Systems
        c. Automated Motion Control Option
        d. Navigation Systems
        e. Ship Controls
        f. Integrated Bridge System (if provided)
        g. Auto Pilot (or DPS, if provided)
        h. Communications
        i. Bridge Radar and Sonar
    - Steering and Canard Room arrangements
        a. Steering equipment

b. Canard/stabilizer actuation equipment (and automation, if provided)
c. Stationkeeping and trackline performance
d. Bow thruster (if provided)

8. Auxiliary Systems
    - HVAC Diagrams
    - Seawater Cooling Diagram
    - Drainage and Ballast Diagram
    - Firemain Diagram
    - Freshwater System
    - Fuel Diagrams
    - Compressed Air diagram
    - Anchor Handling
    - Mooring arrangement
    - Boat stowage arrangement
    - Crane and stores handling
    - Environmental Pollution Control Systems
9. Outfit and Furnishings
    - Paint Systems
    - Hull Interior Finishing Systems (Insulation, Sheathing, Non-structural bulkheads)
    - Accommodations and Furnishings
    - Workshop arrangements
    - Stores
10. Mission Electronics Systems and arrangements
11. Charting Lab arrangement
12. Mission Overboard Equipment Handling arrangements
13. Service area arrangement
14. Review of any unresolved issues
15. Incorporation of all Approved Configuration Changes and deviations from the Preliminary Design
    - Review all SOR changes

16. Not To Exceed Cost Estimate for Detail Design and Construction

17. Schedule for Detail Design and Construction

18. Overall Assessment and Recommendation